PROGRAM OPPORTUNITY NOTICE

DEMONSTRATING SECURE, RELIABLE MICROGRIDS AND GRID-LINKED ELECTRIC VEHICLES TO BUILD RESILIENT, LOW-CARBON FACILITIES AND COMMUNITIES

PON-14-301

http://www.energy.ca.gov/contracts/index.html

State of California

California Energy Commission

July 2014

Table of Contents

I. INTRODUCTION 1
A. PURPOSE OF SOLICITATION 1
B. KEY WORDS/TERMS 1
C. APPLICANTS' ADMONISHMENT 2
D. BACKGROUND 2
E. FUNDING 5
F. KEY ACTIVITIES SCHEDULE 7
G. PRE-APPLICATION WORKSHOP 7
H. QUESTIONS 9

II. ELIGIBILITY REQUIREMENTS 10
A. APPLICANT REQUIREMENTS 10
B. PROJECT REQUIREMENTS 10

III. APPLICATION ORGANIZATION AND SUBMISSION INSTRUCTIONS 18
A. APPLICATION FORMAT, PAGE LIMITS, AND NUMBER OF COPIES 18
B. APPLICATION DELIVERY 19
C. APPLICATION ORGANIZATION AND CONTENT 19

IV. EVALUATION AND AWARD PROCESS 23
A. APPLICATION EVALUATION 23
B. RANKING, NOTICE OF PROPOSED AWARDS, AND AGREEMENT DEVELOPMENT 23
C. GROUNDS TO REJECT AN APPLICATION OR CANCEL AN AWARD 24
D. MISCELLANEOUS 25
E. STAGE ONE: APPLICATION SCREENING 27
F. STAGE TWO: APPLICATION SCORING 29

ATTACHMENTS

1	Application Form *(requires signature)*
2	Executive Summary Form
3	Fact Sheet Template
4	Project Narrative Form
5	Project Team Form
6	Scope of Work Template
	Project Schedule *(excel spreadsheet)*
7	Budget Forms *(excel spreadsheet)*
8	CEQA Compliance Form *(requires signature)*
9	Reference and Work Product Form
10	Contact List Template
11	Commitment and Support Letter Form *(letters require signature)*
12	References for Calculating Energy End-Use, Electricity Demand, and GHG Emissions

I. Introduction

A. Purpose of Solicitation

The purpose of this solicitation is to fund Technology Demonstration and Deployment (TD&D) projects that demonstrate the reliable integration of energy efficient demand-side resources, distributed clean energy generation, and smart grid components to enable energy-smart community development.

California's electric grid must become more resilient and adaptable to climate change impacts such as increased fires, severe storms, and heat waves. Microgrids advance this goal because they are able to disconnect from the grid and provide islands of stable, independent power for critical facilities such as hospitals. This solicitation supports the development of microgrids that incorporate clean, low-carbon energy resources with energy storage and on-site energy management systems. These microgrids will help the state of California achieve its carbon reduction goals and serve as models for integrating a range of technologies into the larger grid, including electric vehicles. Projects must fall within the following project groups:

- **Group 1: Demonstration of Low Carbon-Based Microgrids for Critical Facilities**
- **Group 2: Demonstration of High-Penetration, Renewable-Based Microgrids**
- **Group 3: Demonstration of Advanced Smart and Bidirectional Vehicle Charging**

See Part II of this solicitation for project eligibility requirements. Applications will be evaluated as follows: Stage One proposal screening and Stage Two proposal scoring. Applicants may submit multiple applications, though each application may address only one of the project groups identified above. If an applicant submits multiple applications that address the same project group, each application must be for a distinct project (i.e., no overlap with respect to the tasks described in the Scope of Work, Attachment 6).

B. Key Words/Terms

Word/Term	Definition
Applicant	The respondent to this solicitation
Application	An applicant's formal written response to this solicitation
CAM	*Commission Agreement Manager,* the person designated by the Energy Commission to oversee the performance of an agreement resulting from this solicitation and to serve as the main point of contact for the Recipient
EPIC	*Electric Program Investment Charge,* the source of funding for the projects awarded under this solicitation
Energy Commission	California Energy Commission
IOU	*Investor-owned utility,* including Pacific Gas and Electric Co., San Diego Gas and Electric Co., and Southern California Edison
NOPA	*Notice of Proposed Award,* a public notice that identifies award recipients
Principal Investigator	The lead scientist or engineer for the applicant's project, who is responsible for overseeing the project; in some instances, the

Word/Term	Definition
	Principal Investigator and Project Manager may be the same person
Project Manager	The person designated by the applicant to oversee the project and to serve as the main point of contact for the Energy Commission
Project Partner	An entity or individual that contributes financially or otherwise to the project (e.g., match funding, provision of a demonstration site), and does not receive Energy Commission funds
Recipient	The recipient of an award under this solicitation
Solicitation	This entire document, including all attachments and exhibits ("solicitation" may be used interchangeably with "program opportunity notice")
State	State of California

C. Applicants' Admonishment

This solicitation contains application requirements and instructions. Applicants are responsible for **carefully reading** the solicitation, asking appropriate questions in a timely manner, ensuring that all solicitation requirements are met, submitting all required responses in a complete manner by the required date and time, and **carefully rereading** the solicitation before submitting an application. In particular, please carefully read the **Screening/Scoring Criteria and Grounds for Rejection** in Part IV, and the terms and conditions located at: http://www.energy.ca.gov/research/contractors.html.

Applicants are responsible for the cost of developing applications. This cost cannot be charged to the State. All submitted documents will become public records upon the posting of the Notice of Proposed Award.

D. Background

1. Electric Program Investment Charge (EPIC) Program

This solicitation will award projects funded by the EPIC, an electricity ratepayer surcharge established by the California Public Utilities Commission (CPUC) in December 2011.[1] The purpose of the EPIC program is to benefit the ratepayers of three investor-owned utilities (IOUs), including Pacific Gas and Electric Co., San Diego Gas and Electric Co., and Southern California Edison. The EPIC funds clean energy technology projects that promote greater electricity reliability, lower costs, and increased safety.[2] In addition to providing IOU ratepayer benefits, funded projects must lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals.[3]

---

[1] See CPUC "Phase 1" Decision 11-12-035, December 15, 2011, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/156050.PDF.

[2] See CPUC "Phase 2" Decision 12-05-037, May 24, 2012, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF.

[3] California Public Resources Code, Section 25711.5(a), http://www.leginfo.ca.gov/cgi-bin/displaycode?section=prc&group=25001-26000&file=25710-25712.

Annual program funds total $162 million per year, 80% of which will be administered by the California Energy Commission and 20% of which will be administered by the IOUs.

2. Program Areas, Strategic Objectives, and Funding Initiatives

EPIC projects must fall within the following **program areas** identified by the CPUC:

- Applied research and development;
- Technology demonstration and deployment; and
- Market facilitation

In addition, projects must fall within one of 18 general focus areas (**"strategic objectives"**) identified in the Energy Commission's EPIC Investment Plan[4] and within one or more specific focus areas (**"funding initiatives"**) identified in the plan. This solicitation targets the following program area, strategic objective, and funding initiatives:

- **Program Area:** Technology Demonstration and Deployment
- **Strategic Objective S14:** Demonstrate the Reliable Integration of Energy Efficient Demand-Side Resources, Distributed Clean Energy Generation, and Smart Grid Components to Enable Energy-Smart Community Development
    - **Funding Initiative S14.2:** Demonstrate Renewable Energy-Based Microgrids Capable of Sharing Resources Across the larger Power Grid
    - **Funding Initiative S14.3:** Demonstrate Advanced Vehicle-to-Grid Energy Storage Technologies and Second-Use Vehicle Battery Applications

3. Applicable Laws, Policies, and Background Documents

This solicitation addresses the energy goals described in the following laws, policies, and background documents. Please see the discussion above for links to laws, policies, and background documents specific to EPIC.

Laws/Regulations

- **Assembly Bill (AB) 32 ("The Global Warming Solutions Act of 2006")**

  AB 32 created a comprehensive program to reduce greenhouse gas (GHG) emissions in California. GHG reduction strategies include a reduction mandate of 1990 levels by 2020 and a cap-and-trade program. AB 32 also required the California Air Resources Board (ARB) to develop a Scoping Plan that describes the approach California will take to reduce GHGs. ARB must update the plan every five years.

  Additional information: http://www.arb.ca.gov/cc/ab32/ab32.htm
  Applicable Law: California Health and Safety Code §§ 38500 et. seq.

- **Renewables Portfolio Standard (Senate Bill (SB) X1-2, Statutes of 2011-12, First Extraordinary Session)**

  SB X1-2 requires that all California electricity retailers adopt the goals of 20 percent of retail sales from renewable energy sources by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020.

[4] http://www.energy.ca.gov/research/epic/documents/final_documents_submitted_to_CPUC/2012-11-01_EPIC_Application_to_CPUC.pdf.

- **AB 785, Building Efficiency (Statutes of 2009)**

  AB 758 requires the Energy Commission to collaborate with the California Public Utilities Commission and stakeholders to develop a comprehensive program to achieve greater energy savings in existing residential and nonresidential buildings. The Energy Commission developed a *Comprehensive Energy Efficiency Program for Existing Buildings Scoping Report* in 2012, and plans to develop voluntary and mandatory strategies and approaches to achieve energy savings.

  Additional information: http://www.energy.ca.gov/ab758/
  Applicable Law: California Public Resources Code § 25943, California Public Utilities Code §§ 381.2 and 385.2

Policies/Plans

- **Governor's Clean Energy Jobs Plan (2011)**

  In June 2011, Governor Jerry Brown announced a plan to invest in clean energy and increase efficiency. The plan includes a goal of producing 20,000 megawatts (MW) of renewable electricity by 2020 by taking the following actions: addressing peak energy needs, developing energy storage, creating efficiency standards for buildings and appliances, and developing combined heat and power (CHP) projects. Specific goals include building 8,000 MW of large-scale renewable and transmission lines, 12,000 MW of localized energy, and 6,500 MW of CHP.

  Additional information: http://gov.ca.gov/docs/Clean_Energy_Plan.pdf

- **Bioenergy Action Plan (2012)**

  Various California state agencies developed the 2012 Bioenergy Action Plan to accelerate clean energy development, job creation, and protection of public health and safety. The plan recommends actions to increase the sustainable use of organic waste, expand research and development of bioenergy facilities, reduce permitting and regulatory challenges, and address economic barriers to bioenergy development.

  Additional information:
  http://www.resources.ca.gov/docs/2012_Bioenergy_Action_Plan.pdf

- **Integrated Energy Policy Report (Biennial)**

  California Public Resources Code section 25302 requires the Energy Commission to release a biennial report that provides an overview of major energy trends and issues facing the state. The IEPR assesses and forecasts all aspects of energy industry supply, production, transportation, delivery, distribution, demand, and pricing. The Energy Commission uses these assessments and forecasts to develop energy policies.

  Additional information: http://www.energy.ca.gov/energypolicy
  Applicable Law: California Public Resources §§ 25300 et. seq.

- **CPUC's Energy Efficiency Strategic Plan (2008)**

  The Energy Efficiency Strategic Plan creates a roadmap for achieving energy efficiency within the residential, commercial, industrial, and agricultural sectors. The plan was updated in January 2011 to include a lighting chapter.

  Additional information: http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/eesp/

Reference Documents

Refer to the documents below for information on microgrids:

- *Microgrids: A Regulatory Perspective,* CPUC Policy and Planning Division (April 2014) http://www.cpuc.ca.gov/NR/rdonlyres/01ECA296-5E7F-4C23-8570-1EFF2DC0F278/0/PPDMicrogridPaper414.pdf
- *The Advanced Microgrid,* Sandia National Laboratories (March 2014) http://nyssmartgrid.com/wp-content/uploads/The-Advanced-Microgrid_Integration-and-Interoperability-Final.pdf

Refer to the link below for information about past Energy Commission research projects and activities:

- http://www.energy.ca.gov/research/

E. FUNDING

There is **up to $26.5 million** available for grants awarded under this solicitation. The total, minimum, and maximum funding amounts for each project group are listed below.

1. Amount Available and Minimum/ Maximum Funding Amounts

Project Group	Available funding	Minimum award amount	Maximum award amount
Group 1: Demonstration of Low-Carbon-Based Microgrids for Critical Facilities	$20,500,000	$500,000	$5,000,000
Group 2: Demonstration of High-Penetration Renewable-Based Microgrids			
Group 3: Demonstration of Advanced Smart and Bidirectional Vehicle Charging	$6,000,000		$2,000,000

2. Match Funding Requirement

Match funding is required in the amount of at least **25%** of the requested funds. Applicants that provide more than this amount will receive additional points during the scoring phase (See Part IV).

- **"Match funds"** include: (1) "cash in hand" funds; (2) equipment; (3) materials; (4) information technology services; (5) travel; (6) subcontractor costs; (7) contractor in-kind labor costs; and (8) "advanced practice" costs. Match funding sources include the prime contractor, subcontractors, and demonstration sites (e.g., test site staff services). "Match funds" do not include Energy Commission awards, future/contingent awards from other entities (public or private), or the cost or value of the project work site.

- **"Cash in hand" funds** means funds that are in the recipient's possession and are reserved for the proposed project, meaning that they have not been committed for use or pledged as match for any other project. "Cash in hand" funds include funding awards earned or received from other agencies for the proposed technologies or study (but not for the identical work). As applicable, proof that the funds exist as cash is required at the project kick-off meeting.
- **"Equipment"** means an item with a unit cost of at least $5,000 and a useful life of at least one year. **Purchasing equipment with match funding is encouraged** because there are no disposition requirements at the end of the agreement for such equipment. Typically, grant recipients may continue to use equipment purchased with Energy Commission funds if the use is consistent with the intent of the original agreement.
- **"Materials"** means tangible project items that cost less than $5,000 and have a useful life of less than one year.
- **"Information Technology Services"** means the design, development, application, implementation, support, and management of computer-based information systems directly related to the tasks in the Scope of Work. All information technology services in this area must comply with the electronic file format requirements in Subtask 1.1 (Products) of the Scope of Work.
- **"Travel"** means all travel required to complete the tasks identified in the Scope of Work. Travel includes in-state and out-of-state travel, and travel to conferences. Use of match funds for out-of-state travel and travel to conferences is encouraged.
- **"Subcontractor Costs"** means all costs incurred by subcontractors for the project, including labor and non-labor costs.
- **"Contractor in-Kind Labor Costs"** means contractor labor costs that are not charged to the Energy Commission.
- **"Advanced Practice Costs"** means costs not charged to the Energy Commission that represent the incremental cost difference between standard and advanced practices, measures, and products used to implement the proposed project. For example, if the cost of purchasing and/or installing insulation that meets the applicable building energy efficiency standard is $1/square foot and the cost of more advanced, energy efficient insulation is $3/square foot, the Recipient may count up to $2/square foot as match funds.

- Match funds may be spent only during the agreement term, either before or concurrently with EPIC funds. Match funds also must be reported in invoices submitted to the Energy Commission.
- All applicants providing match funds must submit commitment letters that: (1) identify the source(s) of the funds; (2) justify the dollar value claimed; (3) provide an unqualified (i.e., without reservation or limitation) commitment that guarantees the availability of the funds for the project; and (4) provide a strategy for replacing the funds if they are significantly reduced or lost. Please see Attachment 11, Commitment and Support Letter Form.

3. <u>Allowable Purchases</u>

a. <u>Groups 1 and 2: Demonstration of Low-Carbon-Based Microgrids for Critical Facilities; Demonstration of High-Penetration, Renewable-Based Microgrids</u>

No more than 30% of the EPIC funds requested may be used to purchase renewable generation hardware such as photovoltaic systems. The 30% limit does not apply to EPIC

funds used to purchase other hardware, such as cost-effective energy storage. EPIC funds may not be used to purchase energy efficiency upgrades. However, the costs of upgrades procured by the applicant for the project may be counted as match funding, under the category of "advanced practice costs."

b. Group 3: Demonstration of Advanced Smart and Bidirectional Vehicle Charging

EPIC funds may not be used to purchase plug-in electric vehicles (PEVs). However, the costs of PEVs procured by the applicant for the project may be counted as match funding, under the category of "advanced practice costs."

4. Change in Funding Amount

The Energy Commission reserves the right to:

- Increase or decrease the available funding and minimum/maximum award amounts described in this section.
- Allocate any additional funds to passing applications, in rank order.
- Reduce funding to an amount deemed appropriate if the budgeted funds do not provide full funding for agreements. In this event, the Recipient and Commission Agreement Manager will reach agreement on a reduced Scope of Work commensurate with available funding.

F. KEY ACTIVITIES SCHEDULE

Key activities, dates, and times for this solicitation and for agreements resulting from this solicitation are presented below. An addendum will be released if the dates change for activities that appear in **bold.**

ACTIVITY	DATE	TIME *(PST or PDT)*
Solicitation Release	7/3/14	
Pre-Application Workshop	**7/29/14**	**10:00 a.m.**
Deadline for Written Questions	**8/1/14**	**5:00 p.m.**
Anticipated Distribution of Questions and Answers	week of 8/25/14	
Deadline to Submit Applications	**11/3/14**	**3:00 p.m.**
Anticipated Notice of Proposed Award Posting Date	1/11/15	
Anticipated Energy Commission Business Meeting Date	April 2015	
Anticipated Agreement Start Date	May 2015	
Anticipated Agreement End Date	3/31/18	

G. PRE-APPLICATION WORKSHOP

Energy Commission staff will hold one Pre-Application Workshop to discuss the solicitation with applicants. Participation is optional but encouraged. Applicants may attend the workshop in-person, via the internet (WebEx, see instructions below), or via conference call on the date and at the time and location listed below. Please call (916) 654-4381 or refer to the Energy Commission's website at www.energy.ca.gov/contracts/index.html to confirm the date and time.

Date and time: July 29, 2014 at 10:00 a.m.

Location: California Energy Commission
1516 9th Street
Sacramento, CA 95814
Hearing Room A

WebEx Instructions:

- To join the WebEx meeting, go to https://energy.webex.com and enter the meeting number and password below:

  Meeting Number: 922 051 138
  Meeting Password: Meeting@10
  Topic: PON-14-301 Pre-Application Workshop

- To Logon with a Direct Phone Number: After logging into WebEx, a prompt will appear on-screen for a phone number. In the "Number" box, enter your area code and phone number and click "OK" to receive a call for the audio of the meeting. International callers may use the "Country/Region" button to help make their connection.

- To Logon with an Extension Phone Number: After you login, a prompt will ask for your phone number. Select "CANCEL." Call **1-866-469-3239** (toll-free in the U.S. and Canada). When prompted, enter the meeting number above and the unique Attendee ID number listed in the top left area of the screen after login. International callers may dial in using the "Show all global call-in numbers" link (also in the top left area).

Telephone Access Only:

Call **1-866-469-3239** (toll-free in the U.S. and Canada). When prompted, enter the meeting number above. International callers may select their number from https://energy.webex.com/energy/globalcallin.php.

Technical Support:

- For assistance with problems or questions about joining or attending the meeting, please call WebEx Technical Support at **1-866-229-3239.** You may also contact Jamie Patterson at (916) 327-2342.
- System Requirements: To determine whether your computer is compatible, visit: http://support.webex.com/support/system-requirements.html.
- Meeting Preparation: The playback of UCF (Universal Communications Format) rich media files requires appropriate players. Please determine whether the players are installed on your computer by visiting: https://energy.webex.com/energy/systemdiagnosis.php.

H. QUESTIONS

During the solicitation process, direct questions to the Commission Agreement Officer listed below:

Gordon Kashiwagi, Commission Agreement Officer
California Energy Commission
1516 Ninth Street, MS-18
Sacramento, California 95814
Telephone: (916) 654-5131
FAX: (916) 654-4423
E-mail: Gordon.Kashiwagi@energy.ca.gov

Applicants may ask questions at the Pre-Application Workshop, and may submit written questions via mail, email, and FAX. However, all questions must be received by the deadline listed in the "Key Activities Schedule."

A question and answer document will be e-mailed to all parties who attended the Pre-Application Workshop and provided their contact information on the sign-in sheet. The questions and answers will also be posted on the Commission's website at: http://www.energy.ca.gov/contracts/index.html.

Any verbal communication with a Commission employee concerning this solicitation is not binding on the State and will in no way alter a specification, term, or condition of the solicitation. Therefore, all communication should be directed in writing to the assigned Commission Agreement Officer.

II. Eligibility Requirements

A. Applicant Requirements

1. Eligibility

This solicitation is open to all public and private entities and individuals.

2. Terms and Conditions

Each grant agreement resulting from this solicitation will include terms and conditions that set forth the recipient's rights and responsibilities. By signing the Application Form (Attachment 1), each applicant agrees to enter into an agreement with the Energy Commission to conduct the proposed project according to the terms and conditions that correspond to its organization, without negotiation: (1) University of California terms and conditions; (2) U.S. Department of Energy terms and conditions; or (3) standard terms and conditions. The standard terms and conditions are located at http://www.energy.ca.gov/research/contractors.html. The University of California and U.S. Department of Energy terms and conditions are under negotiation and will be posted once finalized.

Failure to agree to the terms and conditions by taking actions such as failing to sign the Application Form or indicating that acceptance is based on modification of the terms will result in **rejection** of the application. Applicants **must read** the terms and conditions carefully. The Energy Commission reserves the right to modify the terms and conditions prior to executing grant agreements.

3. California Secretary of State Registration

California business entities and non-California business entities that conduct intrastate business in California and are required to register with the California Secretary of State must do so and be in good standing in order to enter into an agreement with the Energy Commission. If not currently registered with the California Secretary of State, applicants should contact the Secretary of State's Office as soon as possible. For more information, visit the Secretary of State's website at: www.sos.ca.gov.

B. Project Requirements

1. Technology Demonstration and Deployment Stage

Projects must fall within the "technology demonstration and deployment" stage, which involves the installation and operation of pre-commercial technologies or strategies at a scale sufficiently large and in conditions sufficiently reflective of anticipated actual operating environments to enable appraisal of operational and performance characteristics, and of financial risks.[5]

All demonstration projects must be located in IOU service territory (PG&E, SDG&E, or SCE).

2. Project Focus

a. Group 1: Demonstration of Low Carbon-Based Microgrids for Critical Facilities

[5] See CPUC "Phase 2" Decision 12-05-037 at pp. 39-40 and 90, http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF.

Proposals must demonstrate low carbon-based microgrid technologies that: (1) protect critical facilities from service interruptions by providing reliable power; and (2) have high potential for energy and cost savings, in addition to environmental benefits. Single-facility microgrid projects and microgrid projects that serve multiple customers over multiple properties and across public rights of way are eligible for funding.

Eligible projects must include at least one "critical facility" (defined as either a public or private facility that provides critical services to its community in times of public emergency such as a natural disaster, power outage, disease epidemic, or chemical emergency), in addition to other types of facilities. Examples of critical facilities include:

- Hospitals
- Emergency operation centers
- Care facilities
- Fire stations
- Police stations
- Water and wastewater treatment plants
- Facilities identified as sources of essential services in a California Local Energy Assurance Plan (CaLEAP)[6]
- Fueling facilities
- Ports
- Critical federal, state, and municipal facilities (e.g., courts and jails)
- Schools
- Shelters (e.g., facilities that provide shelter to humans or animals during public emergencies)
- Supermarkets

Applicants must identify each proposed critical facility in Attachment 1 (Application Form) and explain why it falls within the definition of "critical facility."

Project goals include the following:

- Support the deployment of low carbon-based microgrids in California's communities, preferably in areas with power supply issues caused by lack of transmission line capacity or the retirement of a power plant (e.g., the San Onofre Nuclear Generating Station);
- Demonstrate that microgrids can provide energy savings, integrate renewable generation, reduce fossil fuel use, and efficiently manage resources with automation provided by an energy management system/ microgrid controller meeting IEEE 2030.7, *Standard for the specification of Microgrid Controllers*.
- Produce technical and economic microgrid performance data, including documentation of installation issues, operational constraints, and operational performance (such as the number of hours a microgrid can operate independently off the grid);
- Identify barriers to deployment of low carbon-based microgrids (such as financing and regulatory activities), and solutions to the barriers;
- Determine microgrid configurations of renewable generation, energy efficiency, demand response,[7] and energy storage that provide the highest value to ratepayers and utilities;

[6] http://www.caleap.org/index.php.

- Identify and efficiently serve critical loads;
- Create a replicable microgrid model by developing lessons learned and best practices;
- Develop use cases that show the daily operating value of a low carbon-based microgrid for critical facilities; and
- Use automation and communication strategies that optimize reliability, safety, customer savings, and environmental benefits.

Microgrid projects must meet the following **technical requirements:**

1) Projects must include at a minimum: (1) generation; and (2) controllable loads managed with advanced monitoring, control, and automation systems. Projects must have a microgrid controller/energy management system that meets IEEE 2030.7 to identify, isolate, and efficiently serve critical loads.
2) Projects must have the ability to drop non-critical loads, coordinate generation and loads, control storage, prevent export of power during over-generation, and limit other grid impacts such as harmonics, VAr imbalances, and steep ramp rates.
3) Microgrids must have the ability to automatically disconnect and operate independently from the main grid. For example, if energy service from the main grid is disrupted, automated controls will reduce non-required loads (e.g., selected lighting and HVAC systems), and the microgrid will distribute power from on-site generation and storage for an extended period. When the main grid is back online, the microgrid will automatically reconnect, recharge energy storage, and control on-site generation as appropriate.
4) The microgrid must be able to operate in islanded mode for an extended period, meaning greater than 3 hours.
5) Microgrid technologies must be capable of being made commercially available at the end of the project (i.e., sold, leased, or licensed to the general public), in keeping with the intent of this solicitation to advance technologies towards large-scale deployment.
6) Microgrids must meet or exceed the U.S. Department of Energy's 2020 goals of commercial-scale microgrid systems capable of reducing the outage time of required loads by >98% at lowest cost while reducing emissions by >20% compared to a diesel backup genset.[8]
7) Inverters used in the project must be "smart inverters" that meet the requirements of IEEE 1547a or IEEE 1547.8.
8) Projects must comply with: (1) IEEE 1547.4; (2) IEEE1547.8; and (3) CPUC Rule 21.[9]

---

[7] Demand response allows end-use electricity customers to reduce their electricity usage in a given time period, or to shift the usage to another time period in response to a price signal, financial incentive, environmental condition, or reliability signal. Demand response reduces ratepayer costs by lowering peak time energy usage, and may also prevent power outages when the grid is strained. Demand response programs are administered by California's three regulated IOUs (PG&E, SDG&E, and SCE).

For additional information, visit:
http://www.pge.com/en/mybusiness/save/energymanagement/index.page;
https://www.sce.com/wps/portal/home/business/savings-incentives/demand-response/; and
http://www.sdge.com/save-money/demand-response/overview.

[8] http://energy.gov/sites/prod/files/Microgrid%20Workshop%20Report%20August%202011.pdf

[9] http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/rule21.htm.

9) Projects must use energy efficiency and demand response where appropriate to reduce consumption. Applicants should evaluate energy efficiency measures that will achieve a permanent reduction in consumption of electricity, gas, and water.
10) On-site power generation must be from renewable resources integrated with electric storage and demand response, to the extent feasible and cost effective. Examples of preferred microgrid generation resources include wind and solar. Combined heat and power may also be used.
11) Projects may include engineering and interconnection infrastructure.

The Technical Tasks in Part III of **the Scope of Work (Attachment 6)** must incorporate the following:

1) At least 12 months of technical and economic micogrid data collection, including documentation of installation issues, operational constraints, and operational performance (such as the number of hours a microgrid can operate independently off the grid), and response to grid emergencies.
2) A discussion from a microgrid owner's perspective of how the microgrid has provided or will provide value and benefits.
3) A discussion of how the microgrid has provided or will provide grid resiliency and climate change adaptation for the proposed critical facilities.
4) A discussion of the microgrid's use of renewable resources, demand response, and energy storage to help create a modern, clean, and resilient grid.
5) A discussion of barriers and solutions to deployment of a low carbon-based microgrid for the proposed types of critical facilities, including but not limited to financing options, permitting requirements, and regulatory activities.
6) Documentation of success, measured in accordance with parameters approved by the Energy Commission.
7) Development of use cases that maximize the daily operating value to the owner of and facilities served by a low carbon-based microgrid for critical facilities.
8) A discussion of lessons learned and best practices, including a design configuration that provides the highest value to owners, ratepayers, and utilities.

b. Group 2: Demonstration of High-Penetration, Renewable-Based Microgrids

Proposals must demonstrate the viability of a microgrid to manage high amounts (up to 100%) of renewable energy to meet the facility/community load while avoiding adverse grid impacts, through the use of a microgrid controller/energy management system. Projects must focus on the replicable deployment of high-penetration, renewable-based microgrids for commercial, industrial, and mixed-use communities. Residential-only communities are not the focus of this project group, though they are included in mixed-use communities. Single-facility microgrid projects and microgrid projects that serve multiple customers over multiple properties and/or across public rights of way are eligible for funding.

Project goals include the following:

- Support the deployment of high-penetration, renewable-based microgrids in California's industrial, commercial, and/or mixed use facilities and communities;
- Demonstrate that microgrids can provide value to customers and the grid by enabling higher penetrations of renewable energy than the existing distribution infrastructure supports, while avoiding adverse grid impacts through the use of a microgrid controller/energy management system;

- Demonstrate that microgrids can operate with up to 100% renewable energy supply, and/or export renewable energy during periods of high renewable energy production or low demand;
- Encourage energy efficiency upgrades and demand response to maximize the impact of renewables and avoid the need to export power during periods of over-generation;
- Produce technical and economic microgrid performance data, including documentation of installation issues, operational constraints, and operational performance (such as the number of hours a microgrid can operate independently off the grid);
- Identify barriers to deployment of high-penetration, renewable-based microgrids (such as financing and regulatory requirements) for specific facility/community types, and solutions to the barriers;
- Determine microgrid configurations of renewable generation, energy efficiency, demand response,[10] and energy storage that provide the highest value to owners, ratepayers, and utilities;
- Create a replicable microgrid model by developing lessons learned and best practices;
- Develop use cases that maximize the daily operating value of high-penetration, renewable-based microgrids for customers and the grid, including management of energy storage and demand response to avoid exporting power when the grid experiences periods of over-generation; and
- Use automation and communication strategies that optimize reliability, safety, customer savings, and environmental benefits.

Proposals must meet the following **technical requirements:**

1) Microgrid technologies must be capable of being made commercially available at the end of the project (i.e., sold, leased, or licensed to the general public), in keeping with the intent of this solicitation to advance technologies towards large-scale deployment.
2) Projects must have a microgrid controller/energy management system that meets IEEE 2030.7, *Standard for the Specification of Microgrid Controllers* to identify, isolate, and efficiently serve critical loads.
3) Projects must have the ability to drop non-critical loads, coordinate generation and loads, control storage, prevent export of power during over-generation, and limit other grid impacts such as harmonics, VAr imbalances, and steep ramp rates.
4) Projects must demonstrate islanding from the grid, consistent with the serving IOU utility's requirements.
5) Microgrids must meet or exceed the U.S. Department of Energy's 2020 goals of commercial-scale microgrid systems capable of reducing the outage time of required loads by >98% at lowest cost while reducing emissions by >20% compared to a diesel backup genset.[11]
6) Inverters used in the project must be "smart inverters" that meet the requirements of IEEE 1547a or IEEE 1547.8.[12]
7) Renewable resources must supply more than 51% of the facility or community's load.
8) Projects must reduce energy use by using energy efficiency and demand response where appropriate.

---

[10] See footnote 7 for an explanation of demand response.

[11] http://energy.gov/sites/prod/files/Microgrid%20Workshop%20Report%20August%202011.pdf.

[12] http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/rule21.htm.

9) Projects may include engineering and interconnection infrastructure.

The Technical Tasks in Part III of **the Scope of Work (Attachment 6)** must incorporate the following:

1) At least 12 months of technical and economic migrogrid data collection, including: documentation of installation issues, operational constraints, operational performance (such as the number of hours a microgrid can operate independently off the grid), and response to grid emergencies.
2) A discussion of the microgrid's use of local renewable energy resources to provide the majority of its electricity at an affordable cost. Include the microgrid's ability to export renewable energy during periods of high production and/or low demand while avoiding periods of over-generation.
3) A discussion of the microgrid's use of renewable resources, demand response, and storage to help create a modern, clean, and resilient grid.
4) A discussion of the barriers and solutions to deployment of a high-penetration, renewable-based microgrid for specific facility/community types, including but not limited to financing options, permitting requirements, and regulatory activities.
5) Documentation of success, measured in accordance with parameters approved by the Energy Commission.
6) Development of use cases that maximize the daily operating value of high-penetration, renewable-based microgrids to the customer and the grid, including management of microgrid resources such as storage and demand response to avoid exporting power when the grid is experiencing periods of over-generation.
7) A discussion of lessons learned and best practices, including a design configuration that provides the highest value to ratepayers and utilities.

c. Group 3: Demonstration of Advanced Smart and Bidirectional Vehicle Charging

Projects within this group will advance the integration of plug-in electric vehicles (PEVs) with the electric grid and with buildings, and will validate the economics of actively managed "smart" one-way charging (SC), vehicle-to-grid (V2G), and/or vehicle-to-building (V2B) use cases. This project group is open to both public and private PEV fleets. PEV fleets provide a large energy capacity resource for dispatchable load and/or ancillary services, and it is easier to validate the economics of subject technologies in demonstrations involving PEV fleets with a single owner. Projects must demonstrate SC, V2G, and/or V2B capability at facilities located in IOU territories.

While demonstrations may be co-located as part of a microgrid demonstration proposed in Groups 1 or 2, projects proposed for Group 3 must be able to be performed independently, in the event that the associated microgrid proposal is not funded.

Project goals include the following:

- Quantify the costs and benefits of advancing smart and bidirectional charging systems;
- Develop clear and compelling use cases to demonstrate the daily operating value of SC, V2G, and V2B, including electricity delivery from PEVs to buildings in times of high prices, emergencies, or grid outages. The focus will be on proving enhanced functionality, resilience, and cost savings to PEV fleet owners by enabling SC, V2G, and/or V2B;

- Identify and evaluate, from a fleet owner's perspective, the impacts of PEV integration systems;
- Provide recommendations for improvements to the grid, or for accelerated deployment of PEV charging infrastructure and related systems;
- Identify challenges and recommend solutions to commercializing SC, V2G, and/or V2B technologies; and
- Identify the barriers and solutions to deployment of advanced smart and bidirectional vehicle charging, including but not limited to financing options, permitting requirements, and regulatory activities.

Proposals must meet the following **technical requirements:**

1) The subject technology must be capable of being made commercially available at the end of the project (i.e., sold, leased, or licensed to the general public), in keeping with the intent of this solicitation to advance technologies towards large-scale deployment.
2) The demonstration must involve actual or simulated real-time grid services, including demand response program participation.
3) Recipients must coordinate demonstrations with applicable stakeholders.
4) Forward-compatible PEV chargers satisfying 2017 requirements (e.g., the SAE J1772 standard) must be used in demonstrations to ensure that investments at demonstration sites yield the greatest value and are not subject to retrofits in the near future.
5) Each PEV demonstration fleet must have either a minimum capacity of 500 kWh or consist of 6 or more PEVs with a minimum combined capacity of 100 kWh.

The Technical Tasks in Part III of the Scope of Work (Attachment 6) must incorporate the following:

1) At least 12 months of technical and economic data collection.
2) A quantification of costs and benefits that will be created for PEVs through the advancement of smart and bidirectional charging systems, making PEV ownership more economically viable.
3) Use cases that demonstrate the daily operating value of SC, V2G, and V2B, including electricity delivery from PEVs to buildings in times of high prices, emergencies, or grid outages. The focus will be on proving enhanced functionality, resilience, and cost savings to PEV fleet owners by enabling SC, V2G, and/or V2B.
4) An evaluation, from a fleet owner's perspective, of the impacts of PEV integration systems.
5) Recommendations for improvements to the grid, or PEV charging infrastructure and related systems that will accelerate deployment.
6) A discussion of the barriers to deploying and commercializing advanced smart and bidirectional vehicle charging (including but not limited to financing options, permitting requirements, and regulatory activities), and solutions to the barriers.
7) Documentation of success, measured in accordance with parameters approved by the Energy Commission.

3. Ratepayer Benefits, Technological Advancements, and Breakthroughs

California Public Resources Code section 25711.5(a) requires EPIC-funded projects to:

- Benefit electricity ratepayers; and
- Lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals.

The CPUC defines "ratepayer benefits" as greater reliability, lower costs, and increased safety.[13] The CPUC has also adopted the following guiding principles as complements to the key principle of electricity ratepayer benefits: societal benefits; GHG emissions mitigation and adaptation in the electricity sector at the lowest possible cost; the loading order; low-emission vehicles/transportation; economic development; and efficient use of ratepayer monies.[14]

Accordingly, the Project Narrative Form (Attachment 4) and the "Goals and Objectives" section of the Scope of Work Template (Attachment 6) must describe how the project will: (1) benefit California IOU ratepayers by increasing reliability, lowering costs, and/or increasing safety; and (2) lead to technological advancement and breakthroughs to overcome barriers to achieving the state's statutory energy goals.

4. Measurement and Verification Plan

Include a Measurement and Verification Plan in the Project Narrative (Attachment 4) that describes how actual project benefits will be measured and quantified, such as by pre and post-project energy use (kilowatt hours, kilowatts) and cost. Any estimates of energy savings or GHG impacts must be calculated using the References for Calculating Electricity End-Use, Electricity Demand, and GHG Emissions (Attachment 12).

[13] *Id.* at p. 19.

[14] *Id.* at pp. 19-20.

III. Application Organization and Submission Instructions

A. Application Format, Page Limits, and Number of Copies

The following table summarizes the application formatting and page limit requirements:

Format	• **Font:** 11-point, arial (excluding excel spreadsheets) • **Margins:** No less than one inch on all sides (excluding headers and footers) • **Spacing:** Single spaced, with a blank line between each paragraph • **Pages:** Numbered and printed double-sided (when determining page limits, each printed side of a page counts as one page) • **Labeling:** Tabbed and labeled as required in Sections B and C below • **Binding:** Original binder clipped; all other copies spiral or comb bound (binders discouraged) • **File Format:** MS Word version 1997-2003 or version 2007 or later (.doc or .docx format), excluding excel spreadsheets • **File Storage:** Electronic files of the application must be submitted on a CD-ROM or USB memory stick
Page Limits	• Page limits are as follows: o **Executive Summary** (Attachment 2): **two** pages o **Fact Sheet** (Attachment 3): **two** pages o **Project Narrative Form** (Attachment 4): **forty** pages o **Project Team Form** (Attachment 5): **two** pages for each resume o **Reference and Work Product Form** (Attachment 9): **two** pages for project descriptions o **Commitment and Support Letter Form** (Attachment 11): **two** pages, excluding the cover page The following attachments may not cumulatively exceed **one hundred twenty five** pages: o **Executive Summary Form** o **Fact Sheet Template** o **Project Narrative Form** o **Scope of Work Template** (Attachment 6) • There are no page limits for the following: o **Application Form** (Attachment 1) o **Budget Forms** (Attachment 7) o **CEQA Compliance Form** (Attachment 8) o **Contact List Template** (Attachment 10)
Number of Copies of the Application	• **6** hard copies (including one copy with original signatures) • **One** electronic copy (on a CD-ROM or USB memory stick)

B. APPLICATION DELIVERY

Include the following label information on the mailing envelope:

Applicant's Project Manager Applicant's Name Street Address City, State, and Zip Code PON-14-301 Contracts, Grants, and Loans Office, MS-18 California Energy Commission 1516 Ninth Street, 1st Floor Sacramento, California 95814

Applications must be delivered to the Energy Commission's Contracts, Grants, and Loans Office in a sealed package (in person or via U.S. mail or courier service) during normal business hours, prior to the date and time specified in the "Key Activities Schedule" in Part I of this solicitation. Applications received after the specified date and time are considered late and will not be accepted. Postmark dates of mailing, e-mail, and facsimile (FAX) transmissions are not acceptable in whole or in part, under any circumstances.

C. APPLICATION ORGANIZATION AND CONTENT

1. Submit applications in the order specified below.
2. Label the proposal application cover "Program Opportunity Notice PON-14-301" and include: (a) the title of the application; and (b) the applicant's name.
3. Separate each section of the application by a tab that is labeled only with the tab number and section title indicated below.

Tab/Attachment Number	Title of Section
1	Application Form
2	Executive Summary
3	Fact Sheet
4	Project Narrative
5	Project Team
6	Scope of Work and Project Schedule
7	Budget
8	CEQA Compliance Form
9	References and Work Product
10	Contact List
11	Commitment and Support Letters

Below is a description of each required section of the application:

1. Application Form (Attachment 1)

This form requests basic information about the applicant and the project. The application must include an original form that includes all requested information and is signed by an

authorized representative of the applicant's organization.

2. **Executive Summary Form (Attachment 2)**
   The Executive Summary must include: a project description; the project goals and objectives to be achieved; an explanation of how the goals and objectives will be achieved, quantified, and measured; and a description of the project tasks and overall management of the agreement.

3. **Fact Sheet Template (Attachment 3)**
   The project fact sheet must present project information in a manner suitable for publication (if the project receives funding, the Energy Commission may use the fact sheet to publicize the project). The fact sheet must follow the template, which includes a summary of project specifics and a description of the issue addressed by the project, a project description, and anticipated benefits for the state of California.

4. **Project Narrative Form (Attachment 4)**
   This form will include the majority of the applicant's responses to the Scoring Criteria in Part IV.

5. **Project Team Form (Attachment 5)**
   Identify by name all key personnel[15] assigned to the project, including the project manager and principal investigator (if applicable). Clearly describe their individual areas of responsibility. Include the information required for each individual, including a resume (maximum two pages, printed double-sided).

6. **Scope of Work Template (Attachment 6)**
   Applicants must include a completed Scope of Work for each project, as instructed in the template. The Scope of Work identifies the tasks required to complete the project. It includes a project schedule that lists all products, meetings, and due dates. All work must be scheduled for completion within 36 to 48 months of the project start date.

   Electronic files for **Parts I-IV** of the Scope of Work are in **MS Word. Part V** (Project Schedule) is in **MS Excel**.

7. **Budget Forms (Attachment 7)**
   The budget forms are in MS Excel format and consist of seven worksheets. Detailed instructions for completing them are included at the beginning of Attachment 7. **Read the instructions before completing the worksheets**. Complete and submit information on **all** budget worksheets. The salaries, rates, and other costs entered on the worksheets will become a part of the final agreement.

   1) All project expenditures (match share and reimbursable) must be made within the approved agreement term. Match share requirements are discussed in Part I of this solicitation. The entire term of the agreement and projected rate increases must be considered when preparing the budget.

[15] "Key personnel" are individuals that are critical to the project due to their experience, knowledge, and/or capabilities.

2) The budget must reflect estimates for **actual** costs to be incurred during the agreement term. The Energy Commission may only approve and reimburse for actual costs that are properly documented in accordance with the grant terms and conditions. Rates and personnel shown must reflect the rates and personnel the applicant would include if selected as a Recipient.
3) The proposed rates are considered capped and may not change during the agreement term. The Recipient will only be reimbursed for **actual** rates up to the rate caps.
4) The budget must **NOT** include any Recipient profit from the proposed project, either as a reimbursed item, match share, or as part of overhead or general and administrative expenses (subcontractor profit is allowable). Please review the terms and conditions and budget forms for additional restrictions and requirements.
5) The budget must allow for the expenses of all meetings and products described in the Scope of Work. Meetings may be conducted at the Energy Commission or by conference call, as determined by the Commission Agreement Manager.
6) Applicants must budget for permits and insurance. Permitting costs may be accounted for in match share (please see the discussion of permits in the Scope of Work, Attachment 6).
7) **Prevailing wage requirement:** Applicants must pay prevailing wages (i.e., rates pre-determined by the California Department of Industrial Relations) to all workers employed on public works projects that exceed $1,000. Public works projects involve demolition, installation, repair, or maintenance work. If the proposed project involves such work, the Applicant must assume that the project is a public work and budget accordingly unless it obtains a determination from the California Department of Industrial Relations or a court of competent jurisdiction that the project is not a public work. Please see the terms and conditions for additional information about the prevailing wage requirement.

8. California Environmental Quality Act (CEQA) Compliance Form (Attachment 8)

The Energy Commission requires the information on this form to facilitate its evaluation of the project under CEQA (Public Resources Code section 21000 et. seq.), a law that requires state and local agencies in California to identify, award, and mitigate the significant environmental impacts of their actions. The form will also help applicants to determine CEQA compliance obligations by identifying which parts of the project may trigger CEQA. If the project includes only activities that do not trigger CEQA (such as paper studies), the worksheet will help to identify and document this.

Failure to complete the CEQA process in a timely manner may result in cancellation of the award and allocation of funding to the next highest-scoring project.

9. Reference and Work Product Form (Attachment 9)

1) Section 1: Provide applicant and subcontractor references as instructed.
2) Section 2: Provide a list of past projects detailing technical and business experience of the applicant (or any member of the project team) that is related to the proposed work. Identify past projects that resulted in market-ready technology, advancement of codes and standards, and/or advancement of state energy policy. Include copies of up to three of the applicant or team member's recent publications in scientific or technical journals related to the proposed project, as applicable.

10. Contact List Template (Attachment 10)

The list identifies the names and contact information of the project manager, administrator, and accounting officer.

11. Commitment and Support Letter Form (Attachment 11)

A commitment letter commits an entity or individual to providing the service or funding described in the letter. A support letter details an entity or individual's support for the project.

1) Commitment Letters
   - Applicants must submit a **match funding** commitment letter signed by each representative of the entity or individual that is committing to providing match funding. The letter must: (1) identify the source(s) of the funds; and (2) guarantee the availability of the funds for the project.
   - The applicant must include a letter signed by an authorized representative of the proposed **demonstration site** that commits to providing the site for the proposed activities.
   - **Project partners** that are making contributions other than match funding or a demonstration site must submit a commitment letter signed by an authorized representative that: (1) identifies how the partner will contribute to the project; and (2) commits to making the contribution.

2) Support Letters

   All applicants must include at least one support letter from a project stakeholder (i.e., an entity or individual that will benefit from or be involved in the project) that: (1) describes the stakeholder's interest or involvement in the project; (2) indicates the extent to which the project has the support of the relevant industry and/or organizations; and (3) describes any support it intends (but does not necessarily commit) to provide for the project, such as funding or the provision of a demonstration site.

IV. Evaluation and Award Process

A. Application Evaluation

Applications will be evaluated and scored based on responses to the information requested in this solicitation. To evaluate applications, the Energy Commission will organize an Evaluation Committee that consists primarily of Energy Commission staff. The Evaluation Committee may use technical expert reviewers to provide an analysis of applications. Applications will be evaluated in two stages:

1. Stage One: Application Screening

The Contracts, Grants, and Loans Office and/or the Evaluation Committee will screen applications for compliance with the Screening Criteria in **Section E** of this Part. **Applications that fail any of the screening criteria will be rejected.**

2. Stage Two: Application Scoring

Applications that pass Stage One will be submitted to the Evaluation Committee for review and scoring based on the Scoring Criteria in **Section F** of this Part.

- The scores for each application will be the average of the combined scores of all Evaluation Committee members.
- **A minimum score of 70.00 points** is required for the application to be eligible for funding. In addition, the application must receive a score of **49.00 points** for criteria **1−4** to be eligible for funding.
- **Clarification Interviews:** The Evaluation Committee may conduct optional in-person or telephone interviews with applicants during the evaluation process to clarify and/or verify information submitted in the application. However, these interviews may not be used to change or add to the content of the original application. Applicants will not be reimbursed for time spent answering clarifying questions.

B. Ranking, Notice of Proposed Awards, and Agreement Development

1. Ranking and Notice of Proposed Awards

Applications that receive a minimum score of 70.00 points for all criteria will be ranked according to their score.

- The Energy Commission will post a **Notice of Proposed Award (NOPA)** that includes: (1) the total proposed funding amount; (2) the rank order of applicants; and (3) the amount of each proposed award. The Commission will post the NOPA at its headquarters in Sacramento and on its website, and will mail it to all parties that submitted an application. Proposed awards must be approved by the Commission at a business meeting.
- **Debriefings:** Unsuccessful applicants may request a debriefing after the release of the NOPA by contacting the Agreement Officer listed in Part I. A request for debriefing must be received **no later than 15 calendar days** after the NOPA is released.
- The Energy Commission reserves the right to:
    - Allocate any additional funds to passing applications, in rank order; and
    - Negotiate with successful applicants to modify the project scope, schedule, and/or level of funding.

2. Agreements

Applications recommended for funding will be developed into a grant agreement to be considered at an Energy Commission Business Meeting. Recipients may begin the project only after full execution of the grant agreement (i.e., approval at a business meeting and signature by the Recipient and the Energy Commission).

- **Resolution Requirement *(for government agency recipients only)*:** Prior to approval of the agreement at a business meeting, government agency recipients (e.g., federal, state, and local governments; air/water/school districts; joint power authorities; and state universities) must provide a resolution that authorizes the agency to enter into the agreement and is signed by a representative authorized to execute the agreement and all documents related to the award.

  Resolutions must include: (1) a brief description of the project; (2) the award amount; and (3) an acceptance of the award.
- **Agreement Development:** If approved at a business meeting, the Contracts, Grants, and Loans Office will send the Recipient a grant agreement for approval and signature. The agreement will include the applicable terms and conditions and will incorporate this solicitation by reference. The Energy Commission reserves the right to modify the award documents (including the terms and conditions) prior to executing any agreement.
- **Failure to Execute an Agreement:** If the Energy Commission is unable to successfully execute an agreement with an applicant, it reserves the right to cancel the pending award and to fund the next highest-ranked, eligible application.
- **Agreement Amendment:** The executed agreement may be amended by mutual consent of the Energy Commission and the Recipient. The agreement may require amendment as a result of project review, changes in project scope, and/or availability of funding.

C. Grounds to Reject an Application or Cancel an Award

Applications that do not pass the screening stage will be rejected. In addition, the Energy Commission reserves the right to reject an application and/or to cancel an award if the following circumstances are discovered at any time during the application or agreement process:

- The application contains false or intentionally misleading statements or references that do not support an attribute or condition contended by the applicant.
- The application is intended to erroneously and fallaciously mislead the State in its evaluation and the attribute, condition, or capability is a requirement of this solicitation.
- The application does not literally comply or contains caveats that conflict with the solicitation, and the variation or deviation is material.
- The applicant has previously received funding through a Public Interest Energy Research (PIER) agreement, has received the PIER royalty review letter (which the Energy Commission annually sends out to remind past recipients of their obligations to pay royalties), and has not responded to the letter or is otherwise not in compliance with repaying royalties.
- The applicant has received unsatisfactory evaluations from the Energy Commission or another California state agency.
- The applicant is a business entity that is not in good standing with the California Secretary of State.
- The applicant has not demonstrated that it has the financial capability to complete the project.

- The application is not submitted in the format specified in Part III, Sections A, B, and C of the solicitation.

D. MISCELLANEOUS

1. Solicitation Cancellation and Amendment

It is the policy of the Energy Commission not to solicit applications unless there is a bona fide intention to award an agreement. However, if it is in the State's best interest, the Energy Commission reserves the right to do any of the following:

- Cancel this solicitation;
- Revise the amount of funds available under this solicitation;
- Amend this solicitation as needed; and/or
- Reject any or all applications received in response to this solicitation.

If the solicitation is amended, the Energy Commission will send an addendum to all parties who requested the solicitation, and will also post it on the Energy Commission's website at: www.energy.ca.gov/contracts. The Energy Commission will not reimburse applicants for application development expenses under any circumstances, including cancellation of the solicitation.

2. Modification or Withdrawal of Application

Applicants may withdraw or modify a submitted application before the deadline to submit applications by sending a letter to the Agreement Officer listed in Part I. Applications cannot be changed after that date and time. An Application cannot be "timed" to expire on a specific date. For example, a statement such as the following is non-responsive to the solicitation: "This application and the cost estimate are valid for 60 days."

3. Confidentiality

Though the entire evaluation process from receipt of applications up to the posting of the NOPA is confidential, **all submitted documents will become public records** after the Energy Commission posts the NOPA or the solicitation is cancelled. **The Energy Commission will not accept or retain applications that identify any section as confidential.**

4. Solicitation Errors

If an applicant discovers any ambiguity, conflict, discrepancy, omission, or other error in the solicitation, the applicant should immediately notify the Energy Commission of the error in writing and request modification or clarification of the solicitation. The Energy Commission will provide modifications or clarifications by written notice to all parties who requested the solicitation, without divulging the source of the request for clarification. The Energy Commission will not be responsible for failure to correct errors.

5. Immaterial Defect

The Energy Commission may waive any immaterial defect or deviation contained in an application. The Energy Commission's waiver will not modify the application or excuse the successful applicant from full compliance with solicitation requirements.

6. Disposition of Applicant's Documents

Upon the posting of the NOPA, all applications and related materials submitted in response to this solicitation will become property of the State and public records. Applicants who seek the

return of any materials must make this request to the Agreement Officer listed in Part I, and provide sufficient postage to fund the cost of returning the materials.

E. STAGE ONE: APPLICATION SCREENING

SCREENING CRITERIA *The Application must pass ALL criteria to progress to Stage Two.*	Pass/Fail
1. The application is received by the Energy Commission's Contracts, Grants, and Loans Office by the due date and time specified in the "Key Activities Schedule" in Part I of this solicitation.	☐ Pass ☐ Fail
2. The application addresses only one of the eligible project groups, as indicated on the Application Form.	☐ Pass ☐ Fail
3. If the applicant has submitted more than one application for the same project group, each application is for a distinct project (i.e., no overlap with respect to the tasks described in the Scope of Work, Attachment 6). *(If the projects are not distinct and the applications were submitted at the same time, only the first application screened by the Energy Commission will be eligible for funding. If the applications were submitted separately, only the first application received by the Energy Commission will be eligible for funding).*	☐ Pass ☐ Fail
4. The requested funding falls within the minimum and maximum range specified in Part I of this solicitation.	☐ Pass ☐ Fail
5. The applicant and project meet the eligibility requirements described in Part II of this solicitation.	☐ Pass ☐ Fail
6. The application is complete, meaning that it: (1) includes all documents required in Part III, Section C; (2) includes all information required within each document; and (3) is signed where required by an authorized representative.	☐ Pass ☐ Fail
7. The project date does not extend past the anticipated agreement end date specified in the "Key Activities Schedule" in Part I.	☐ Pass ☐ Fail
8. The Application Form and budget specify that the applicant will provide at least 25% of the requested Energy Commission funds in match funds.	☐ Pass ☐ Fail
9. The Application Form identifies one or more demonstration site locations, and all demonstration sites are located in a California electric IOU service territory (PG&E, SDG&E, or SCE).	☐ Pass ☐ Fail
10. The Application Form identifies at least one "critical facility," defined as either a public or private facility that provides service to its community in times of public emergency such as a natural disaster, power outage, disease epidemic, or chemical emergency.	☐ Pass ☐ Fail
11. The application does not contain any confidential information or identify any portion of the application as confidential.	☐ Pass ☐ Fail

SCREENING CRITERIA *The Application must pass ALL criteria to progress to Stage Two.*	**Pass/Fail**
12. The applicant has not included a statement or otherwise indicated that it will not accept the terms and conditions, or that acceptance is based on modifications to the terms and conditions.	☐ Pass ☐ Fail
13. The proposal includes a match funding commitment letter, a demonstration site commitment letter, and one or more support letters that meet the requirements of Attachment 11. *(If the proposal includes commitment letters that are not required and do not meet the requirements of Attachment 11, the letters will not be considered in the scoring phase).*	☐ Pass ☐ Fail

F. STAGE TWO: APPLICATION SCORING

Proposals that pass ALL Stage One Screening Criteria will be evaluated based on the Scoring Criteria on the next page and the Scoring Scale below (with the exception of criteria 6−8, which will be evaluated as described in each criterion). Each criterion has an assigned number of possible points, and is divided into multiple sub-criteria. The sub-criteria are not equally weighted. The Project Narrative (Attachment 4) must respond to each sub-criterion, unless otherwise indicated.

- The total minimum passing score is **70.00 out of 100 points.**
- The minimum passing score for **criteria 1−4 is 49.00 points.** The points for criteria 5−8 will only be applied to proposals that achieve the minimum score for criteria 1−4.

SCORING SCALE

% of Possible Points	Interpretation	Explanation for Percentage Points
0%	Not Responsive	• The response fails to address the criteria. • The omissions, flaws, or defects are significant and unacceptable.
10-30%	Minimally Responsive	• The response minimally addresses the criteria. • The omissions, flaws, or defects are significant and unacceptable.
40-60%	Inadequate	• The response addresses the criteria. • There are one or more omissions, flaws, or defects or the criteria are addressed in a limited way that results in a low degree of confidence in the proposed solution.
70%	Adequate	• The response adequately addresses the criteria. • Any omissions, flaws, or defects are inconsequential and acceptable.
80%	Good	• The response fully addresses the criteria with a good degree of confidence in the applicant's response or proposed solution. • There are no identified omissions, flaws, or defects. Any identified weaknesses are minimal, inconsequential, and acceptable.
90%	Excellent	• The response fully addresses the criteria with a high degree of confidence in the applicant's response or proposed solution. • The applicant offers one or more enhancing features, methods, or approaches that exceed basic expectations.
100%	Exceptional	• All criteria are addressed with the highest degree of confidence in the applicant's response or proposed solution. • The response exceeds the requirements in providing multiple enhancing features, a creative approach, or an

		exceptional solution.

SCORING CRITERIA

The Project Narrative (Attachment 4) must respond to each criterion below, unless otherwise indicated. Any estimates of energy savings or GHG impacts must be calculated as specified in the **References for Calculating Electricity End-Use, Electricity Demand, and GHG Emissions (Attachment 12).**

Scoring Criteria	Maximum Points
1. Technical Merit and Need a. Provides a clear and concise description of the goals, objectives, technological or scientific knowledge advancement, and innovation in the proposed project. b. Explains how the proposed project will lead to technological advancement and breakthroughs that overcome barriers to achieving the state's statutory energy goals. c. Summarizes the current status of the relevant technology and/or scientific knowledge, and explains how the proposed project will advance, supplement, and/or replace current technology and/or scientific knowledge. d. Justifies the need for EPIC funding, including an explanation of why the proposed work is not adequately supported by competitive or regulated markets. e. Discusses the degree to which the proposed work is technically feasible and achievable. f. Provides a clear and plausible measurement and verification plan that describes how energy savings and other benefits specified in the application will be determined and measured. g. *For Project Groups 1 and 2:* Discusses any unique attributes that make the microgrid ideal to meet the needs of the local community, such as location in an area with power supply issues caused by lack of transmission line capacity or the retirement of a power plant (e.g., the San Onofre Nuclear Generating Station).	**20**
2. Technical Approach a. Describes the technique, approach, and methods to be used in performing the work described in the Scope of Work. Highlights any outstanding features. b. Describes how tasks will be executed and coordinated with various participants and team members. c. Identifies and discusses factors critical for success, in addition to risks, barriers, and limitations. Provides a plan to address them. d. Describes how the knowledge gained, experimental results, and lessons learned will be made available to the public and key decision-makers.	**20**

Scoring Criteria	Maximum Points
Project Groups 1 and 2: e. Explains how the microgrid project will leverage renewable resources, demand response, and energy storage to create a modern, clean, and resilient grid. f. Describes a strategy for the use of local renewable resources for the demonstration. g. Assesses the microgrid's potential to perform demand response for non-required loads. h. *Optional:* Assesses the microgrid's potential to provide ancillary services to the CAISO grid. i. Explains how success of the project will be measured.	
3. Impacts and Benefits for California IOU Ratepayers a. Explains how the proposed project will benefit California Investor-Owned Utility (IOU) ratepayers with respect to the EPIC goals of greater reliability, lower costs, and/or increased safety). b. Provides clear, plausible, and justifiable **quantitative** estimates of potential benefits for California IOU electricity ratepayers, including the following (*as applicable)*: annual electricity and thermal savings (kilowatt-hour and therms), peak load reduction and/or shifting, energy cost reductions, greenhouse gas emission reductions, air emission reductions (e.g., NOx), and water use and/or cost reductions. c. States the timeframe, assumptions, and calculations for the estimated benefits, and explains their reasonableness. d. Identifies impacted market segments in California, including size and penetration or deployment rates, with underlying assumptions. e. Discusses any **qualitative** or intangible benefits to California IOU electricity ratepayers, including timeframe and assumptions. f. Provides a cost-benefit analysis that compares project costs to anticipated benefits. Explains how costs and benefits will be calculated and quantified, and identifies any underlying assumptions.	**20**
4. Team Qualifications, Capabilities, and Resources a. Describes the organizational structure of the applicant and the project team. Includes an organizational chart that illustrates the structure. b. Identifies key team members, including the project manager and principal investigator *(include this information in Attachment 5, Project Team Form).* c. Summarizes the qualifications, experience, capabilities, and credentials of the key team members *(include this information in Attachment 5, Project Team Form)*.	**10**

Scoring Criteria	Maximum Points
d. Explains how the various tasks will be managed and coordinated, and how the project manager's technical expertise will support the effective management and coordination of all projects in the application. e. Describes the facilities, infrastructure, and resources available to the team. f. Describes the team's history of successfully completing projects (e.g., RD&D projects) and commercializing and/or deploying results/products. g. Identifies past projects that resulted in a market-ready technology *(include this information in Attachment 9, Reference and Work Product Form)*. h. References are current, meaning within the past three years *(include this information in Attachment 9, Reference and Work Product Form)*. i. Identifies any collaborations with utilities, industries, or others. Explains the nature of the collaboration and what each collaborator will contribute. j. Demonstrates that the applicant has the financial ability to complete the project, as indicated by the responses to the following questions: • Has your organization been involved in a lawsuit or government investigation within the past ten years? • Does your organization have overdue taxes? • Has your organization ever filed for or does it plan to file for bankruptcy? • Has any party that entered into an agreement with your organization terminated it, and if so for what reason? • For Energy Commission agreements listed in the application that were executed (i.e., approved at a Commission business meeting and signed by both parties) within the past five years, has your organization ever failed to provide a final report by the date indicated in the agreement? k. Support or commitment letters (for match funding, test sites, or project partners) indicate a strong level of support or commitment for the project.	
Total Possible Points for criteria 1−4 **(Minimum Passing Score for criteria 1−4 is <u>49.00</u>)**	**70**

<table>
<tr><th>Scoring Criteria</th><th>Maximum Points</th></tr>
<tr><td>5. Budget and Cost-Effectiveness
a. Justifies the reasonableness of the requested funds relative to the project goals, objectives, and tasks.
b. Justifies the reasonableness of costs for direct labor, non-labor (e.g., indirect overhead, general and administrative costs, and subcontractor profit), and operating expenses by task.
c. Explains why the hours proposed for personnel and subcontractors are reasonable to accomplish the activities in the Scope of Work (Attachment 6).
d. Explains how the applicant will maximize funds for technical tasks and minimize expenditure of funds for program administration and overhead.</td><td>10</td></tr>
<tr><td>6. EPIC Funds Spent in California
Projects that spend EPIC funds in California will receive points as indicated in the table below. “Spent in California” means that: (1) Funds under the “Direct Labor” category and all categories calculated based on direct labor in the B-4 budget attachments (Prime and Subcontractor Labor Rates) are paid to individuals who pay California state income taxes on wages received for work performed under the agreement; and (2) Business transactions (e.g., material and equipment purchases, leases, rentals, and contractual work) are entered into with a business located in California.

Airline ticket purchases and payments made to out-of-state workers are not considered funds “spent in California.” However, funds spent by out-of-state workers in California (e.g., hotel and food) are considered funds “spent in California.”

<table>
<tr><th>Percentage of EPIC funds spent in CA
(derived from budget attachment B-2)</th><th>Percentage of Possible Points</th></tr>
<tr><td>>60%</td><td>20%</td></tr>
<tr><td>>70%</td><td>40%</td></tr>
<tr><td>>80%</td><td>60%</td></tr>
<tr><td>>90%</td><td>80%</td></tr>
<tr><td>>100%</td><td>100%</td></tr>
</table>
</td><td>15</td></tr>
<tr><td>7. Ratio of Direct Labor and Fringe Benefit Rates to Loaded Labor Rates
The score for this criterion will derive from the Rates Summary worksheet (Tab B-7) in the budget forms, which compares the weighted direct labor and fringe benefits rate to the weighted loaded rate. This ratio, as a percentage, is multiplied by the possible points for this criterion.</td><td>5</td></tr>
<tr><td>Total Possible Points
(Minimum Passing Score is <u>70</u>)</td><td>100</td></tr>
<tr><td>8. Match Funding (Optional)
• Each match funding contributor must submit a match funding commitment</td><td>10</td></tr>
</table>

Scoring Criteria	Maximum Points
letter that meets the requirements of Attachment 11. Failure to meet these requirements will disqualify the proposal from consideration for match funding points. • Any match funding pledged in Attachment 1 must be consistent with the amount or dollar value described in the commitment letter(s) (e.g., if $5,000 “cash in hand” funds are pledged in a commitment letter, Attachment 1 must match this amount). Failure to meet this requirement will disqualify the proposal from consideration for match funding points. • 5 points for this criterion will be awarded based on the percentage of match funds above the minimum required, relative to the EPIC funds requested. This ratio will be multiplied by 5 to yield the points, and rounded to the nearest whole number. For example: If requested EPIC funds are $1,000,000, the applicant provides $550,000 in match funding, of which $250,000 is the minimum match required. The amount of match funding that can be evaluated for additional points is $300,000. The match funding ratio is 0.30. The proposal will be awarded 2 points • The remaining 5 points for this criterion will be based on the level of commitment, dollar value justification, and funding replacement strategy described in the match funding commitment letter (see Attachment 11). The proposal scoring scale in Section G will be used to rate these criteria.	